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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
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Amendment of Part 90 of the)
Commission's Rules to Adopt)
Regulations for Automatic)
Vehicle Monitoring Systems)
_____)

PR Docket No. 93-61

DOCKET FILE COPY ORIGINAL

To: The Commission

**OPPOSITION OF
METRICOM, INC. AND SOUTHERN CALIFORNIA EDISON COMPANY
TO
PETITIONS FOR RECONSIDERATION**

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SUMMARY

1. The Commission should not reconsider the new Rules to expand permissible voice uses of the band by LMS systems. Voice messaging does not belong in this extremely congested band, nor is voice messaging an important component of LMS. Permitting voice communications will eviscerate the Commission's concept of Part 15 coexisting with LMS in the 902-928 MHz band.

2. The Commission should not alter the new Rules to make the presumption of non-interference rebuttable. The presumption of non-interference is an essential element of the Commission's plan to balance the interests of the vast number of users of Part 15 devices with the LMS industry. Because LMS systems are so easily interfered with, without the presumption, or with a rebuttable presumption, the delicate balance crafted by the Commission will cease to exist. Absent the presumption, LMS systems would simply force Part 15 devices to cease operations.

3. The Commission should reject proposed changes to the new Rules which would permit additional wideband forward links to operate in the band. Throughout this proceeding, the Part 15 community has uniformly and adamantly opposed the use of wideband forward links in the band under all circumstances. The record in this proceeding demonstrates that wideband forward links are band jammers and cannot coexist with the multitude of different users envisioned by the Commission. It is therefore inconsistent for the Commission to allow wideband forward links in the band while simultaneously mandating that the band be shared by multiple users.

4. The Commission should not amend the band plan in the new Rules if such change results in moving the narrowband forward links from the upper portion of the band. It is important to the Part 15 community that LMS narrowband forward links remain located at the upper edges of the band where they are more easily avoided.

5. The Commission should maintain the requirement in the new Rules that LMS licenses will be conditioned upon the licensees' ability to demonstrate, through actual field tests, that their systems do not cause unacceptable levels of interference to Part 15 devices. The testing requirement is not an amendment of Part 15 Rules nor does it alter the hierarchy Rules for the 902-928 MHz band. It is simply a condition of licensing designed to prevent interference between Part 15 devices and LMS systems in the band.

6. The Commission should not change the power and height restrictions on non-multilateration systems nor should it alter the frequency tolerance requirement on such systems. The band will be extremely congested even if the *status quo* is maintained. The power, height and frequency tolerance limits were adopted expressly to facilitate the use of both non-multilateration and Part 15

devices in the band. If such requirements are weakened, it will preclude the ability of Part 15 users to operate in the band.

7. The Commission should not amend the new Rules to allow operators of grandfathered systems to alter their facilities. The grandfather provisions were included in the new Rules to prevent undue hardship to existing AVM licensees during conversion and transition to the new LMS band plan. They were not crafted to permit widespread or material modification of the facilities of constructed systems or of licensed but unbuilt systems. Because such systems will not be subject to full compliance with the new Rules for a significant period, they should not, as a matter of policy, be permitted to expand or modify their facilities unless and until they are in full compliance.

8. The Commission should not reserve a portion of the spectrum for a subband that would be shared by some means of coordination. The coordinated sharing of licenses will have a pronounced negative impact upon Part 15 operations and other uses of the band. Coordinated sharing will result in an increased number of LMS transmitter locations in a given geographical area, and an increased aggregate duty cycle of transmissions from coordinated LMS systems. This will lead to a significantly increased level of interference to Part 15 and other users of the band.

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**OPPOSITION OF
METRICOM, INC. AND SOUTHERN CALIFORNIA EDISON COMPANY
TO
PETITIONS FOR RECONSIDERATION**

1. Metricom, Inc. and Southern California Edison Company (the "Petitioners"), by their attorneys, pursuant to Section 1.429 of the Commission's Rules, hereby file this Opposition to several Petitions for Reconsideration ("PFRs") of the Report and Order^{1/} issued by the Commission in this proceeding.

I. THE COMMISSION SHOULD NOT EXPAND PERMISSIBLE VOICE USES OF LMS SPECTRUM.

2. Petitioners oppose Section I of the PFR filed by MobileVision, L.P. ("Mobile") that seeks to broaden the permitted uses of multilateration LMS. Mobile, on page 5 of its PFR, offers amendments to two definitions contained in new Rule Section 90.7 -- that of LMS and that

^{1/} Report and Order, FCC 95-41, rel. Feb. 6, 1995, 60 Fed. Reg. 15,248 (March 24, 1995).

of Multilateration LMS Systems. The effect of these amendments would be to permit LMS systems to offer unrestricted voice messaging that can interconnect with the public switched telephone network.

3. Voice messaging does not belong in this extremely congested band nor is it an indispensable element of LMS.^{2/} If LMS subscribers want to make or receive calls from their vehicles, those subscribers have other mobile communications services available which were designed for that purpose. Very simply, it is unnecessary for LMS operators to offer the type of voice messaging service sought by Mobile in its PFR in order to have a viable LMS business.

4. Several members of the Part 15 community in their PFRs agree with Petitioners that enforcement of any limitations on the permissible types of messages that can be transmitted utilizing a LMS system is an extraordinarily difficult problem and may well be beyond the scope of the Constitution^{3/} as well as the Communications Act of 1934.^{4/}

5. Petitioners wholeheartedly support the Part 15 Coalition PFR when it states:

To the extent that LMS systems become a source of voice traffic, interference to unlicensed technologies will increase. . . . [I]t is not clear that this [emergency communications] capability requires the use of voice communications or, if emergency communications

^{2/} See PFR of Petitioners ¶¶ 24-28.

^{3/} See, e.g., PFR of the Ad Hoc Gas Distribution Utilities Coalition ¶ 20 ("A content-based speech restriction -- as opposed to a time, place and manner restriction -- is upheld by the courts only upon an exacting showing that the restriction is necessary to achieve a compelling governmental interest, and is narrowly tailored to achieve that end. Few regulations can shoulder that test, and the Gas Utilities doubt that this is one of them.").

^{4/} See, e.g., PFR of UTC at pp. 6-7 ("By allowing transmission of customer messages that are 'related to the location or monitoring functions of the system' or to 'emergency communications,' the Commission will place LMS carriers in the dilemma of having to become substantially involved with their customers' communications -- a practice that is contrary to one of the principal tenets of common carriage.").

are to include voice transmissions, that the systems must interconnect with the PSN. In other radio services, such as maritime and aeronautical, vehicles carry emergency radio beacons that may be activated in an emergency to alert authorities and provide the location of the vehicle/person in distress. No voice communications are necessary.^{5/}

6. If the Commission's intent in creating LMS was to balance the interests of the users of the vast embedded base of Part 15 devices with the new LMS, the Commission not only must hold the line against expansion of the permissible uses of LMS, but it also must modify new Rule Sections 90.353(b) and (c) to clarify what types of messages may be transmitted by LMS licensees and their subscribers. No voice communications should be permitted, and certainly no voice services that interconnect with the public switched network should be permitted. Permitting voice communications in this band will eviscerate the Commission's vision of LMS and Part 15 coexisting in the 902-928 MHz band.

7. Significantly, neither AirTouch Teletrac ("Teletrac") nor Southwestern Bell Mobile Systems, Inc. ("SW") want the Report and Order reconsidered to provide voice capability. Teletrac initiated this proceeding and, of all the parties who want to be LMS providers, has the most experience providing AVM. Teletrac apparently does not deem an expansion of the voice capability provided for in the Report and Order necessary to providing LMS. Expanded voice capability is nowhere mentioned in Teletrac's PFR.

8. SW is as strident on the point of narrowly defining store and forward interconnection as is the Part 15 community:

Rejecting interconnected voice service as a component of LMS, on the one hand, while authorizing 'store and forward' interconnec-

^{5/} PFR of The Part 15 Coalition at pp.7-8.

tion, on the other, represents an irreconcilable conflict within the R&O text. Absent a narrow definition of 'store and forward,' the R&O's prohibition against LMS voice service is likely to prove illusory.^{6/}

By omitting the definition [of store and forward], the R&O will eviscerate the voice service ban.^{7/}

Permitting lengthy conversations on LMS spectrum will increase the probability of harmful interference with Part 15 devices and with other LMS systems, including interference between multilateration and non-multilateration [systems] forced to share the D band.^{8/}

Petitioners could not have said it better.

9. It is extremely significant that SW takes a position virtually indistinguishable from many in the Part 15 community regarding both store and forward voice communications and permitting lengthy voice conversations in the 902-928 MHz band. Likewise, it is extremely significant that Teletrac, the most experienced AVM provider, does not feel the issue of expanding voice use of LMS spectrum is of sufficient import even to give it a passing nod in its PFR. Parties on all sides in this proceeding agree that expanding the permissible voice uses of LMS spectrum by LMS licensees and subscribers could be disastrous. The Commission must reject Mobile's request that the Commission expand voice communications in the 902-928 MHz band.

^{6/} PFR of SW ¶ 13.

^{7/} Id. at ¶ 15 (citing to the fact that "The LMS voice service advocates clearly intend such evisceration. See MobileVision Letter to William F. Caton (Dec. 14, 1994), at 2."

^{8/} Id. at ¶ 16.

II. THE COMMISSION SHOULD NOT MAKE ITS PRESUMPTION OF NON-INTERFERENCE A REBUTTABLE PRESUMPTION.

10. Petitioners oppose those portions of the PFRs of Mobile, Pinpoint Communications, Inc. ("Pinpoint"), and SW that ask the Commission to reconsider the presumption of non-interference inherent in new Rule Section 90.361.^{9/} Mobile, Pinpoint, and SW want this presumption to be a rebuttable presumption, but their PFRs provide few details about how such a rebuttable presumption would work.^{10/} Likewise, Petitioners oppose those portions of the PFRs of Pinpoint and Uniplex that call for the Commission to restore LMS hierarchy in the band or create an arbitration body with a charter to resolve interference disputes between Part 15 and LMS.^{11/}

11. The presumption inherent in new Rule Section 90.361 is an integral part of the Commission's attempt to balance the interests of the public (which has and uses an enormous embedded base of Part 15 devices) with the interests of the nascent LMS industry. Without this presumption, the delicate balance the Commission has crafted will cease to exist. Therefore, a rebuttable presumption is equivalent to no presumption.

^{9/} See PFR of Mobile at ¶¶ 10-12; PFR of Pinpoint at p. 20-24; PFR of SW ¶¶ 11-12.

^{10/} SW provides the most detail, suggesting that if actual interference is demonstrated, the Part 15 device must cease operating until such interference can be eliminated. PFR of SW ¶ 12. As with Pinpoint's and Mobile's position, SW's position is totally antithetical to the Commission's vision of how LMS and Part 15 devices should share the band and is virtually indistinguishable from the present way interference is dealt with between Part 15 devices and any other user of the 902-928 MHz band. In sum, the Commission might as well have done nothing in this proceeding because a rebuttable presumption is virtually the same as no presumption.

^{11/} See PFR of Pinpoint at p. 20-21; PFR of Uniplex at p. 8.

12. The presumption is not the equivalent of revising the hierarchy in the band. This is a red herring. The hierarchy has not, in fact, been altered. New Rule Section 90.361 begins: "Operations authorized under Parts 15 and 97 of this Chapter may not cause harmful interference to LMS systems in the 902-928 MHz band." New Rule Section 90.361 reflects a realization on the part of the Commission that LMS providers must, in their deployment strategies, be cognizant of the existence of the very large embedded base of Part 15 devices in the band. So long as the presumption is intact, there is no need for an arbiter to resolve interference issues. Besides, this is the FCC's job. An additional entity is not needed.

13. Since the inception of this proceeding, the Part 15 community and several LMS providers have told the Commission that the very large embedded base of Part 15 devices will interfere with the new LMS systems that the Commission is attempting to shoehorn into the band.^{12/} The presumption of non-interference is necessary to permit both LMS and Part 15 to share the band. It is only under these circumstances that sharing can take place because LMS is a poor band sharer.

14. Users of the embedded base of Part 15 devices should not have to suffer because LMS cannot share the 902-928 MHz band. The Commission, in enacting new Rule Section 90.361, was correct in creating safe-havens of operation for Part 15 devices within which Part 15 devices may not be forced to cease operation. Creating these safe-havens does not amount to changing the hierarchy in the band. The Commission clearly recognized that there are enormous numbers of Part 15 devices in the 902-928 MHz band that are a fact of life, and that there will be an ever-increasing number of Part 15 devices in this band. The Commission is

^{12/} See, e.g., PFR of Petitioners ¶ 5 nn.3 & 4; PFR of The Part 15 Coalition at p. 3 n.4.

merely calling on LMS operators to deal with that reality when they deploy and operate their systems.

15. No reason exists for the Commission to create an environment where LMS operators can be in denial about the technical vulnerability of LMS systems in this band. The enactment of new Rule Section 90.361 is proof that the Commission acknowledges this fact. It is far better to recognize, as the Commission has, that there will be technical problems for LMS operations in this band and to recognize that LMS operators will need to deal with those problems before committing the resources necessary to build and operate new LMS systems. It is only in this way that operators will have any incentive to anticipate and provide solutions for their interference problems with the Part 15 community. Without the presumption or with a rebuttable presumption or with an arbitration board, LMS providers will simply tell interfering Part 15 devices to shut down.

16. Petitioners again would call the Commission's attention to the fact that Teletrac has not petitioned the Commission to reconsider these aspects of the Report and Order. The Commission's model is the correct one, and the Commission should hold the line against those who want the presumption inherent in new Rule Section 90.361 to be rebuttable, who allege that the Commission has changed the hierarchy of users in the band, and who want an arbitration board established.

III. THE COMMISSION SHOULD NOT PERMIT WIDEBAND FORWARD LINKS IN THE 902-928 MHz BAND UNDER ANY CIRCUMSTANCES.

17. Petitioners oppose those parts of the PFR filed by Uniplex which ask the Commission to reconsider the Report and Order so that: (i) the site limitations under the Commission's grandfather rules are liberalized for LMS systems primarily dependent on

wideband forward links to permit additional site deployment within a 30-mile radius of the primary licensed site;^{13/} and, (ii) a duty cycle limitation is placed on 300 watt wideband forward links instead of requiring a power reduction.^{14/}

18. PFRs filed by members of the Part 15 community are uniformly and adamantly in opposition to wideband forward links in the 902-928 Mhz band under any circumstances.^{15/} This is consistent with the fact that throughout this proceeding, the entire Part 15 community has consistently been opposed to wideband forward links in this band.^{16/}

19. The record in this proceeding is full of evidence that wideband forward links are band jammers and are antithetical to a band premised on sharing by a multitude of different users.^{17/} This is an extremely congested band. It is inconsistent for the Commission to permit wideband forward links in this band and, at the same time, expect the band to be usable by multiple users.

20. New Rule Sections 90.205(b), 90.209(b)(10) and 90.357(a) limit wideband forward links to 30 watts ERP and confine them to a maximum of 8.0 MHz of spectrum. These new Rule Sections appear to be an attempt to meet the concerns raised regarding wideband forward links in the 902-928 MHz band. As pointed out by the Part 15 Coalition in its PFR, these

^{13/} PFR of Uniplex at p. 5.

^{14/} Id. at p. 6.

^{15/} See, e.g., PFR of The Part 15 Coalition at p. 6.

^{16/} See, e.g., Ex Parte Comments of Itron at p. 3, filed Aug. 12, 1994; Ex Parte Comments of Symbol Technologies, filed Aug. 12, 1994. See also PFR of The Part 15 Coalition at p. 4.

^{17/} See, Comments of TIA at p. 4, filed Aug. 12, 1994; Comments of the Part 15 Coalition at p. 2, filed Mar. 15, 1994. See also, Report and Order at ¶ 82.

restrictions are inadequate.^{18/} These inadequate restrictions should not now be diluted pursuant to the Uniplex PFR in order to encourage the placement of LMS systems dependant on wideband forward links in the 902-928 MHz band.

21. There is no evidence in the record that wideband forward link-dependant systems have any unique or superior value. Teletrac has AVM systems in operation using forward links limited to 250 kHz. This proves that LMS systems do not require wideband forward links in order to operate effectively.

22. The Commission should not reconsider the Report and Order in any way which would encourage the development and deployment of LMS systems which use wideband forward links. Prohibition of wideband forward links in the 902-928 MHz band is essential to the Part 15 community.^{19/}

IV. THE COMMISSION SHOULD NOT AMEND ITS NEW RULES TO ADD A DISTANCE VARIABLE TO ITS ANTENNA PLACEMENT RULES AND SHOULD NOT INCLUDE INDOOR PART 15 DEVICE ANTENNAS WITHIN NEW RULE SECTION 90.361(b) OR (c).

23. Petitioners oppose that portion of Uniplex's PFR which asks the Commission to reconsider new Rule Subsections 90.361(b) and (c) so that a distance variable and indoor antennas are added to the Rule.^{20/}

24. Uniplex states: "At a minimum the Commission should add a distance variable to its antenna placement Rules including indoor antennas." Uniplex's PFR is completely devoid

^{18/} PFR of The Part 15 Coalition at p. 5.

^{19/} See, e.g., Letter from Gary J. Shapiro, Group Vice President, CEG/EIA, to the Hon. Reed E. Hundt, Chairman, FCC (Dec. 15, 1994).

^{20/} PFR of Uniplex at p. 8.

of any explanation of what constitutes a "distance variable." It is therefore not clear exactly what Uniplex is requesting from the Commission. What is clear is that the Commission did not adopt anything like Uniplex suggests because such a rule would be completely impossible to enforce, regardless of whether a Part 15 device were located indoors or outdoors. ^{21/}

25. One major benefit of Part 15 devices, and one that has contributed greatly to their success in the marketplace, is the fact that these devices are unlicensed. Because they are unlicensed, they can be rapidly deployed, both indoors and outdoors. Any type of "distance variable" would destroy the capability for Part 15 devices to be located any place that there is need for them. Furthermore, because these devices are typically in the hands of consumers, the use of the devices cannot be restricted by a "distance variable."^{22/} Accordingly, Uniplex's mysterious "distance variable," whether it relates to indoor or outdoor antennas, would be neither workable nor enforceable.

^{21/}Rather than recommending new rule subsections 90.361(b)(c), as is apparently being requested by Uniplex, the Commission should amend new Rule Section 90.361 by adding a new part to this rule which provides that mobile or portable Part 15 devices are deemed not to interfere with LMS systems regardless of whether they are indoor or outdoor. See Petitioners PFR ¶23.

^{22/}For example, while in operation a consumer can carry a portable device to a point nearer and further away from an LMS receive antenna. A Metricom wireless modem or a cordless phone are perfect examples. However, their movement, like the movement of all portable Part 15 devices, is unpredictable.

V. THE COMMISSION SHOULD NOT ALTER THE BAND PLAN IT HAS ADOPTED IF THIS MEANS MOVING THE NARROWBAND FORWARD LINKS FROM THE UPPER PART OF THE BAND.

27. Petitioners oppose that part of SW's PFR that requests that the band plan be altered if such an alteration would mean that the narrowband forward links associated with the provision of LMS service would be relocated from their specified locations at 927.250-928 MHz.

28. It is extremely important for the entire Part 15 community that the LMS narrowband forward links be located at the upper band edges. As the Part 15 community told the Commission on August 12, 1994:

Narrowband (no more than 25 kHz) AVM/LMS forward links should be permitted only between 927.500 and 928.000 MHz. Locating these forward links at the upper edge of the band will make them easier to avoid. Locating the forward links at the upper band edge will not unduly restrict other sharers of this band because there are already paging operations at 929 MHz, and 902-928 MHz band users have to design their equipment to tolerate those high powered signals near the band edge.^{23/}

29. The Commission did the right thing in locating LMS narrowband forward links at the upper band edges, and none of the LMS proponents have asked in their PFRs that the location of the narrowband forward links be altered. However, to the extent the reconsideration of the Report and Order requested in SW's PFR would result in a relocation of the narrowband forward links, the Commission should not be responsive to SW's PFR. The Commission should

^{23/} Letter to Richard B. Engelman, Chief, Technical Standards Branch, Authorization and Evaluation Division, Office of Engineering and Technology, Federal Communications Commission (Aug. 12, 1994).

retain the placement of the narrowband forward links as specified in the Report and Order and new Rules adopted pursuant thereto.^{24/}

VI. THE COMMISSION SHOULD NOT DELETE THE REQUIREMENT IN NEW RULE SECTION 90.353(d) THAT LMS LICENSES WILL BE CONDITIONED UPON THE LICENSEE'S ABILITY TO DEMONSTRATE THROUGH ACTUAL FIELD TESTS THAT THEIR SYSTEMS DO NOT CAUSE UNACCEPTABLE LEVELS OF INTERFERENCE TO PART 15 DEVICES.

30. Petitioners oppose those parts of SW's and Pinpoint's PFRs that request the Commission not to condition LMS licenses upon the licensee's ability to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to Part 15 devices.^{25/} Petitioners view the testing requirement as being very important if LMS systems are going to be able to share the band successfully with Part 15 devices. Petitioners again would call the Commission's attention to the fact that Teletrac, which is the only LMS applicant with any real experience providing AVM, apparently believes that it can successfully meet the testing requirement as Teletrac's PFR does not ask the Commission to reconsider this part of the Report and Order. Under these circumstances, the Commission must ask itself if this is a real issue.

^{24/} Petitioners also oppose that portion the PFR filed by Safetran Systems Corporation which requests the Commission to alter the band plan in the new rules to set aside a certain portion of the band for unspecified "low-power emission and transmission." PFR of Safetran at p. 4. Metricom, as a fellow member of the Part 15 Community, shares Safetran's concerns regarding potential interference from LMS systems. However, Metricom is reluctant to ask the Commission to reopen the issue of the band plan for such a vague proposal. The band plan was not easily arrived at and represents an extremely delicate balance. Metricom is loathe to disturb this balance for the purpose of setting aside an unspecified amount of the band in an unspecified portion of the band for an unspecified purpose. Therefore, Metricom must reluctantly oppose Safetran's request for reconsideration of the band plan established by the new rules.

^{25/} See PFR of Pinpoint at p. 23; PFR of SW ¶ 10.

31. The testing requirement is not an amendment of the Part 15 Rules, nor is the testing requirement a realignment of the hierarchy Rules in the 902-928 MHz band. The first sentence of new Rule Section 90.361 states: "Operations authorized under Parts 15 and 97 of this Chapter may not cause harmful interference to LMS systems in the 902-928 MHz band." The testing requirement is contained within Part 90 of the Rules -- not Part 15. Part 90 of the Rules has been amended by the Report and Order, not Part 15. There has been no fundamental alteration of Part 15 of the Rules.

32. Petitioners agree with SW when it says that the Commission did not give notice of its intent to alter Part 15 of the Rules.^{26/} What SW ignores is that there was a very good reason for the Commission's failure to give such notice -- the Commission never intended to alter Part 15 of its Rules^{27/} and did not in fact alter Part 15 of its Rules. Therefore, SW's argument in this regard fails as it is fundamentally flawed in its premise, which is that Part 15 of the Commission's Rules has somehow been amended by the Report and Order.

33. Pinpoint's argument is likewise fundamentally flawed. Pinpoint admits that Part 15 has not been altered, at least not directly. Undaunted by this fact, Pinpoint forges ahead with the new administrative law principle of "indirect rule modification." Pinpoint accuses the Commission of evading its responsibilities under the Administrative Procedures Act (APA) "by altering Section 15.5(b) indirectly through modification of Part 90."^{28/} Petitioners submit that either the Commission amended Part 15 of its Rules or it did not. Since Pinpoint admits that

^{26/} See PFR of SW ¶ 10.

^{27/} See Erratum ¶ 3, DA 93-516, released May 5, 1993.

^{28/} PFR of Pinpoint at p. 23.

Part 15 has not been amended, the Commission cannot have avoided its responsibilities under the APA to give notice of its intent to modify Part 15.

34. Petitioners do agree with SW that the testing requirement needs clarification.^{29/} Petitioners raised this point in their PFR.^{30/} As the Commission knows only too well, the Part 15 community and the LMS community initiated discussions regarding testing that did not bear fruit. Commission personnel attended these discussions. Much of the problem centered on the parties' inability to do field tests today which simulate fully loaded LMS systems or conditions in which, for example, Metricom and other Part 15 devices and networks are widely in use. These discussions, in which both SW and Pinpoint participated, make SW's and Pinpoint's statements that the testing requirement was not "foreshadowed" by the NPRM or that the NPRM provided "scant" notice of the testing requirement ring hollow.

35. The testing requirement of new Rule Section 90.353(d) is merely a condition of licensing designed to prevent interference between LMS systems and Part 15 devices. SW cannot validly argue that the Commission's power to regulate interference is ultra vires.^{31/} Section 301 of the Communications Act grants the Commission authority to issue licenses with certain conditions. Section 301 specifically provides that "[n]o person shall use or operate any apparatus for the transmission of energy or communications or signals by radio . . . (d) . . . when interference is caused by such use or operation" Petitioners submit that even assuming, arguendo, that SW and Pinpoint are correct that the NPRM did not give the

^{29/} PFR of SW ¶ 10.

^{30/} See PFR of Petitioners ¶ 16.

^{31/} See PFR of SW ¶ 10.

appropriate notice about adopting the testing requirement, the Commission is still empowered, and indeed required, to adopt the testing requirement pursuant to its mandate under the Communications Act to prevent interference.

36. Therefore, the Commission was correct in adopting the testing requirement of new Rule Section 90.353(d), and it should not reconsider its action in this regard as requested by Pinpoint and SW. The Commission should clarify the testing requirement as requested by Petitioners at ¶¶ 14-15 of their PFR.

VII. THE COMMISSION SHOULD NOT ACCORD PINPOINT THE RIGHT TO FURTHER RECONSIDERATION OF THE TERM "FINAL LINK" IN NEW RULE SECTION 90.361(c)(2)(ii)(B).

37. Petitioners oppose that portion of the PFR submitted by Pinpoint which attempts to give the Commission notice that Pinpoint reserves the right to seek further reconsideration of new Rule Section 90.361(c)(2)(ii)(B).^{32/} Petitioners have asked the Commission to clarify what radios the new Rule applies to and the amount of communication required by entities eligible under Subparts B or C of Part 90 to bring their radios within the purview of the new Rule. This Rule, however, is sufficiently clear on the issue of which uses it encompasses, and therefore, Pinpoint was obligated to oppose within the time frame specified in Section 1.429.

38. The new Rule states that the sliding scale power reduction will not be applied to a Part 15 device when such device provides "the final link for communications of entities eligible under Subparts B or C of this Part 90." Subparts B and C of Part 90 govern the use of the spectrum by users of Public Safety Radio Services and Special Emergency Radio Services. Thus, it is clear that the only Part 15 users that are not restricted by the sliding scale power

^{32/} PFR of Pinpoint at p. 23, n.39.

reduction are those relatively few who perform specific public safety functions. The record contains documentation that such users are utilizing Part 15 devices and that the Commission should not limit the antenna height and power to anything less than 15 meters at fully authorized Part 15 power.^{33/} Pinpoint's fears that the "final link" portion of new Rule Section 90.361 "may extend the un rebuttable [sic] presumption to myriad uses of Part 15 devices not contemplated in the record of this proceeding" are groundless for two reasons. First, public safety and special emergency radio services were clearly contemplated in the record of this proceeding; second, the Commission did not intend, and the Rules do not provide for "myriad uses," as this would defeat the public policy rationale underlying the new Rule Section.

39. The public policy rationale underlying this Rule is clear: to ensure that persons or groups who render certain essential public services, including emergency medical services and police, fire, and highway rescue work, can use any radio communications at their disposal. To effectuate this policy goal, the Commission, through the new Rule Section, has avoided narrowing the means available to those designated entities who serve important public safety functions.

40. To extend the provisions of new Rule Section 90.361 to the "myriad uses" feared by Pinpoint would contradict the Commission's policy goal for emergency medical services and public safety because a large number of new uses would, by definition, limit the ability of these important users to access the spectrum. This would only serve to restrict the communications capabilities of those users of spectrum whom the Rule was designed to protect.

^{33/} See, e.g., Ex parte Letter of Med-E-Systems, filed Dec. 6, 1994; Ex parte Letter of Metricom, filed Jan. 8, 1995.

41. That portion of new Rule Section 90.361 dealing with the "final link" is sufficiently clear that Pinpoint should have asked the Commission for reconsideration of whatever is troubling Pinpoint about this new Rule Section within the time provided by section 1.429. Pinpoint should not be accorded a further ability to seek reconsideration of this matter. It is significant that no other member of the LMS community has sought reconsideration of this issue.

VIII. THE COMMISSION SHOULD NOT AMEND NEW RULE SECTIONS 90.205(b) AND 90.353(h) TO ALTER THE POWER AND HEIGHT RESTRICTIONS ON NON-MULTILATERATION SYSTEMS NOR SHOULD IT ALTER NEW RULE SECTION 90.213(a) TO ALTER THE FREQUENCY TOLERANCE REQUIREMENT.

42. Petitioners oppose that portion of the PFRs submitted by Amtech Corporation ("Amtech") which asks the Commission to reconsider the power and height limits on non-multilateration transmitters in new Rule Sections 90.205(b) and 90.353(h).^{34/} Petitioners also oppose those portions of the PFRs submitted by Amtech, Hughes Transportation Management Systems and Texas Instruments Incorporated/MFS Network Technologies, Inc. which ask the Commission to modify new Rule Section 90.213(a) to alter the frequency tolerance requirement.^{35/}

^{34/} PFR of Amtech at pp. 9-13.

^{35/} Amtech requests that the current rule be applied only to non-multilateration systems which have center frequencies within a certain distance from the band edge while systems which operate at a greater distance from the band edge be subject to a frequency tolerance restriction of ± 40 kHz. PFR of Amtech at pp. 13-14. Hughes requests that the frequency tolerance requirement for non-multilateration systems either be (i) eliminated, or (ii) modified to a requirement of 0.066%, or (iii) replaced by a requirement that applies the emission mask at the edges of the band authorized for each transmitter, rather than at just the edges of the subbands allocated for non-multilateration service. PFR of Hughes at pp. 9-13. TI/MFS request that the frequency tolerance requirement be modified to 50 ppm or 0.005%. PFR of TI/MFS at pp. 5-7.

43. With regard to the height/power limitations, Amtech requests the Commission not to restrict non-multilateration transmitters to a height of 15 meters and an effective radiated power ("ERP") of 30 watts. Instead, Amtech wants the Commission to adopt a field strength value limit of 90 dBuV/m at a distance of one mile from the transmitter site and a height of six feet. In sum, Amtech wishes the Commission to alter its Rules to delete the current height/power limit and substitute a field strength limit. In a clear line of sight path, Amtech's desired alteration to the current Rules represents an ERP of 85.7 watts. Part 15 devices cannot share a band in which devices transmitting at 85.7 watts ERP are present.

44. As noted above, the 902-928 band is a shared band which will be extremely congested, even if the *status quo* is maintained. The Commission adopted the height and power limits and frequency tolerance limits expressly to facilitate the use of both non-multilateration and Part 15 devices in the band. Indeed, as the Commission explained in the Report and Order, the height/power limits in the new Rules were designed to "allow non-multilateration systems to share spectrum more easily with other non-multilateration systems and with users of Part 15 devices and will permit greater frequency reuse for these systems."^{36/} If non-multilateration systems are permitted to increase their ERP nearly 200% to 85.7 watts, this will clearly, under the Commission's expressed reasoning, preclude the ability of Part 15 users to operate in the band.

45. As the Commission stated in the Report and Order, the frequency tolerance limit of .00025% is necessary to reduce potential interference to systems operating on neighboring

^{36/} Report and Order at ¶ 93.

frequencies.^{37/} Along with the power and height limitations and the emission mask requirements in the new Rules, the frequency tolerance limit is an essential component for non-multilateration systems to successfully share the band with Part 15 devices. Moreover, with the advent of high-volume equipment being manufactured in the cellular phone industry, the cost of the technology necessary to comply with the frequency tolerance limit will not be a burden on either multilateration or non-multilateration systems.

46. The Commission should not alter its well-reasoned Rules limiting non-multilateration systems to an antenna height of 15 meters, an effective radiated power of 30 watts and a frequency tolerance limit of .00025%. Unquestionably, there are, and will always be, applications which are just beyond the reach of those permitted by the Rules and that are attainable with just a little more power and a little more antenna height and a little better frequency tolerance limit. However, the Commission is in the business of line drawing to facilitate the highest and best use of the spectrum for the most users. It cannot and should not attempt to accommodate every application that can conceivably emanate from the 902-928 MHz band. The current Rules in these areas should not be changed as advocated; all users of the 902-928 MHz band can live with them in their present form.

IX. GRANDFATHERED SYSTEMS SHOULD NOT BE PERMITTED TO ALTER THEIR FACILITIES.

47. Petitioners oppose those portions of Mobile's and Pinpoint's PFRs that request the newly adopted Rules be modified to permit the facilities of grandfathered systems to be

^{37/} Report and Order at ¶ 91.

materially altered.^{38/} The Commission's grandfather Rules were adopted so as not to "impose undue hardship on existing, operating multilateration AVM systems"^{39/} and on "multilateration AVM licensees who have not yet constructed their systems so that such licensees may construct and operate their licensed stations under our newly adopted rules."^{40/} These grandfather Rules were carefully crafted by the Commission to prevent undue hardship to existing AVM licensees during the conversion and transition to the new LMS band plan and, at the same time, provide a fixed target for potential auction bidders.^{41/} The grandfather Rules were not intended to permit widespread or major modification of the facilities of constructed systems or of licensed but unbuilt systems.^{42/}

48. Pinpoint and Mobile want the Commission to alter its grandfather Rules to permit major modification of their authorized facilities. Petitioners oppose such major modifications

^{38/}Pinpoint PFR at pp. 13-17; MobileVision PFR at pp. 7-9.

^{39/}Report and Order, para. 61.

^{40/}Report and Order, para. 61. Petitioners question the wisdom of and public interest benefit of grandfathering stations that have not been constructed. The record indicates the existence of hundreds of unbuilt stations, the bulk of which were obtained during the pendency of this proceeding. Are the entities that have these licenses being rewarded for warehousing spectrum? Won't the large number of such grandfathered systems complicate both the auction of the remaining spectrum and coordination and interference management between grandfathered MLS stations, Part 15 users and non-MLS licensees?

^{41/}"Because this spectrum will be subject to competitive bidding, we must balance our wish to accommodate the desired construction schedules of existing multilateration AVM licensees against the need for prospective bidders to be able to evaluate the likely value of the spectrum upon which they will be bidding." Report and Order, para. 64.

^{42/}Evidence of this sentiment is found in para. 63 of the Report and Order where the Commission says: "The application to modify a license to comply with the new band plan may also include a modification to specify an alternate site, so long as the alternate site is 2 kilometers or less from the site specified in the original license."